FLOWERY TRAIL ROAD
WA PFH 158-1(2)
Stevens and Pend Oreille County, Washington

IDIQ Contract DTFH 70-97-D-00002
Task Order No.99-RP009

STATEMENT OF WORK
Revised 1/04/99

A. INTRODUCTION

The Western Federal Lands Highway Division (WFLHD) of the Federal Highway Administration (FHWA) is proposing to enter into a Task Order with Robert Peccia and Associates (RPA) to improve 10 kilometers of the Flowery Trail Road (Forest Highway 158). The WFLHD is developing this project jointly with the USDA Forest Service (FS), Stevens County, and Pend Oreille County. The following work items are included:

C Prepare Intermediate Plans

C Prepare Right-of-Way Plans

C Prepare Plan-in-Hand Plans, Specifications, and Estimate (PS&E)

C Prepare Final Plans, Specifications, and Estimate (PS&E)

C Provide other data necessary to award and construct the project.

B. PROJECT LOCATION AND DESCRIPTION

1. The project is located approximately 15 kilometers east of Chewelah, Washington along Flowery Trail Road. Project stationing is approximately 14+200 to 24+800.

2. The construction project is scheduled for award in April 2000. Major construction items will include clearing and grubbing, grading, retaining walls, drainage, base, paving, roadway obliteration, guardrail, traffic control, and revegetation.

C. GOVERNMENT FURNISHED PROPERTY AND SERVICES

1. Preliminary Design Plans prepared by RPA and Intermediate Design Plans prepared by WSDOT.

2. Microstation electronic files of the following: Existing Planimetrics and culture, FHWA and WFLHD Standard Drawings.

3. Geopak files with the preliminary horizontal and vertical design alignment (.gpk), and ground survey information (.tin).

4. WFLHD Geopak web site. The web site provides useful Geopak guidance and access to WFLHD's FTP site. The FTP Site provides, Geopak criteria files, .ddb files, and input files. It also contains a Geopak report printing program, and Microstation seed files and cell library.

5. Environmental Assessment.

6. COE 404 Permit for Pend Oreille County

7. Signed Project Agreement with the Forest Service, Stevens County and Pend Oreille County.

8. Geotechnical Recommendation/Analysis and pavement recommendations.

9. Hydraulic recommendations for culverts greater than 1.2 m.

10. WFLHD's CADD standards. Included are a list of Microstation level, color and weight for drawing elements, file naming convention, and plan sheet organization and naming convention.

11. Standard Specifications for the Construction of Roads and Bridges on Federal Highway Projects, FP-96, and Library of Specifications (LOS). LOS will be provided electronically in Corel WordPerfect for Windows.

12. Electronic copy of the Federal Lands Highway Project Development and Design Manual (FLH-PDDM).

13. The following forms:

- **a.** Western Federal Lands Highway Division, Highway Design Standards Form.
- **b.** Unit Bid Price Analysis
- **c.** WFLHD Quality Control Checklist

14. Listing of pay items with pay item numbers, description and pay units.

15. Design Report requirements.

D. PROJECT MANAGEMENT

1. General. Project Management will be a chargeable expense that will include the ongoing management, direction and coordination of the Consultant's project team.

2. Project status. RPA completed the preliminary alignment from 14+200 to 20+400. Washington State Department of Transportation (WSDOT) completed the Intermediate Design from 20+400 to 24+800. General agreement has been reached with the Washington State Department of Fish and Wildlife on the type and size of fish passage structures.

3. Work Schedule and Monthly Reports - Prepare a design schedule for the design work required to meet project milestones as outlined in the Schedule, Section G. This schedule will be used to coordinate activities, meetings and delivery dates between the consultant and WFLHD. It will be used as a tool to check that tasks have been started, are on schedule, and are completed on time. Updates may be necessary to reflect any changes occurring during the course of the project. Progress reports will be prepared and submitted to WFLHD monthly. Describe work accomplished, information needed from FHWA to avoid delay, and changes in scope requiring supplemental agreements.

4. Quality Assurance and Control

a. The consultant will implement quality assurance procedures throughout this contract to ensure that all major project deliverables adequately conform to accepted design practices and comply with FHWA design standards.

b. Provide an independent quality control review prior to the submission of the Plan-in-Hand and Final Design Submittal. The reviewer must be an engineer that has had limited involvement with the project.

(1) Provide a completed Quality Control Checklist with the submittals. All applicable items listed on the checklist must be included in the PS&E or documented in a supplemental report.

(2) Check that the plans comply with FONSI's, EA's, and WFLHD CADD standards.

(3) Review and concur with the Design Report.

5. Project Submittals. The project work will be divided into 14 submittals; Internal and External Intermediate Design, Internal and External Preliminary Right-of-Way Plans, Internal and External Final Right-of-Way Plans, Internal and External Permit Drawings, Internal and External Plan-in-Hand Design, Internal and External Final Design, Final PS&E Sign Off, and

Design Data.

a. The internal submittals will be reviewed by WFLHD employees. External submittals will be reviewed by permitting agencies, and client and FHWA employees. Changes identified during review of the Internal Submittals will be made prior to the External Submittal.

b. The Final Signoff Submittal must be stamped and signed by a Professional Engineer licensed in Washington State.

c. A Value Engineering Study will be preformed by WFLHD on one of the Intermediate Design Submittals.

6. Site Visits and Meetings.

a. **Attendance.** Provide key personnel and design engineers that are knowledgeable of the project to attend meetings. Produce meeting minutes for review, approval and distribution by the government. Provide meeting minutes within seven days which list all new information and decisions for review. Make all changes to the minutes as directed by FHWA within seven days of review.

b. **Progress Meetings.** An informal progress meeting will be held 4 times at the consultant's office to discuss project status and progress or as otherwise agreed. The purpose of these meetings is to monitor project schedule, review design work, and maintain a close working relationship**.**

c. **Pre-submittal meetings.** A pre-submittal meeting at the consultant's office will be held one week prior to the Internal Plan-In-Hand Design submittal. The purpose of the meeting will be to determine the completeness of the submittal before printing. If it is determined that the submittal is not complete the submittal schedule will be revised. This meeting will be substituted for the Progress Meeting in the months they occur.

d. **Internal Review.** Attend the Plan-in-Hand and Final Internal Design Reviews. The internal reviews will occur in Vancouver, WA. One RPA representative will attend.

e. **External Reviews.** Attend the Intermediate, and Plan-in-Hand External Design Reviews. The External reviews will occur on the project site. Two RPA representatives will attend.

f. **Additional Site Visit.** Additional site visits requested by the consultant and approved by the COTR may be made. If approved, these visits will constitute additional work.

7. Coordination with other agencies. Throughout the development of the design, discussions with other agency people as well as other FHWA employees will be required. The consultant should freely participate in these discussions, answer questions, and respond to requests for

information. However, the consultant is not to accept any direction or take on additional work which is beyond the scope of this order. Additional work under this work order or revision of the requirements of this order can only be authorized by the WFLHD Contracting Officer. Coordinate attendance of external design reviews.

8. Design Software. Complete all work in Microstation SE, Geopak, Corel WordPerfect and Quattro Pro.

E. Project Development.

1. General.

a. Environmental. Ensure all design elements and mitigation measures listed in the Environmental Assessments (EA) and Findings of No Significant Impact (FONSI) are addressed in the plans. Implement all requirements of applicable permits in the plans and specifications.

b. Standards. Utilize WFLHD standard drawing and Design Manual. Follow WFLHD Uniform Plan Implementation Report Recommendations.

c. Alignment and safety. All work will be done in accordance with the 1996 Federal Lands Highway Project Development and Design Manual (FLH-PDDM). If this manual does not cover a specific situation, the 1994 AASHTO green book or Washington State Department of Transportation Design Manual will be used. Upon request the COTR will provide further guidance. If design exceptions are required, obtain WFLHD concurrence and provide approved mitigation measures. Document design standards, design exceptions and mitigation on the Western Federal Lands Highway Division, Highway Design Standards form.

d. Design cross-sections.

(1) Evaluate the alignment for curve widening requirements using the revised AASHTO table III-22. Widen the roadway to include curve widening, guardrail shy distance, and standard guardrail shoulder width.

(2) Adjust cut and fill slopes to meet FHWA recommended slope ratios based on cut and fill heights per the FLH PDDM. Transition between cut and fill slopes to achieve a natural blended appearance. Design rock slopes to match existing conditions, and design fills at fish passage culverts at 1:1.5, or possibly at 1:1.25 after consultation with COTR. Satisfy minimum Geotech requirements.

(3) Provide cross sections on 20 meter intervals, and all changes to the roadway and other critical areas (e.g. shoulder widening for guardrail terminal sections, curve widening, cattle guards, culvert inlet and outlets, culvert catch basins and inlet

ditches, under drains, beginning and ending of retaining walls).

(4) Minimize day lighting cut slope. Avoid creating "unofficial" turnouts.

e. Drainage. Design cross drains at a spacing of 150 meters on sustained ditch grades. Minimum diameter of cross drain culverts is 600 mm. Culverts under approach roads may be 450 mm. Evaluate inlet type. Do not specify a drop inlet or catch basin unless there is a specific design rational. WFLHD preference is to not install culverts under high fills or on steep grades. Use down drains to limit cover depth and flatten culvert invert profile. Evaluate need for culvert anchors according to the FLH-PDDM. Design roadside ditches with minimum depth of 300mm below top of subgrade. In erodible soils, include ditch lining rock on all grades more than 4 percent.

f. Fish Passage Structures. Provide alignment with roadway construction limits shown. WFLHD will establish the structure lengths and bury depths.

g. Guardrail. Design for guardrail locations using the FLH PDDM, the WSDOT Design Manual, Guidelines for Embankment Barrier, and the AASHTO Roadside Design Guide.

2. Design Procedures and Requirements

a. General Information. Develop a title sheet and vicinity map for the project.

b. Summaries. Summarize all Plan Quantities.

(1) Summary of Quantities. Summarize all the individual tables into a Summary of Quantities Table plan sheet(s). Information included in the Summary of Quantities is a) Pay Item Number, b) total item quantity, c) plan section where item is shown (may include multiple sections), d) bid schedule quantity, and e) designate if the pay item is a contract quantity. If pay items are needed that are not included in the list of approved pay items, The consultant may request a new item be included in the WFLHD data base. With the request, include the Item Description and Unit of Measurement.

c. Typical section.

(1) Tabulation of Quantities.

(2) Provide Typical Sections for the mainline.

d. Plan-Profile

(1) Tabulation of Quantities.

(2) Maintain a coordinated and balanced horizontal and vertical design alignment.

(3) Make mainline adjustments identified during the Preliminary design field review.

(a) Increase curve lengths at 16+220, 16+320
(b) Shift alignment off DNR land around 16+650
(c) Provide for Stimpson Lumber Co. approach road at 18+540
(d) Adjust alignment so the limits of the new culvert at 19+200 do not exceed the limits of the existing culvert
(e) Eliminate curve at 19+420

(4) In slope the roadbed from approximately 24+300 to 24+800.

(5) Show proposed R/W limits

e. Approach Road Details

(1) Tabulation of Quantities.

(2) Provide completed designs for the approach roads identified in Preliminary design, including Stimpson Lumber Companies requested locations, and approach roads shown on the WSDOT Intermediate Design Plans. Estimated quantity is 18 approach roads.

(a) Approach Roads included in the WSDOT Intermediate plans include:
i) 20+580 FDR 4347000 (pave 50 m from Flowery Trail Road)
ii) 21+600 FDR 4300261
iii) 22+400 Stimpson Lumber Co.
iv) 22+480 Stimpson Lumber Co.
v) 23+680 FDR 4300160 (gravel 120 m from Flowery Trail Road)
vi) 23+910 Centerline Wetland approach
vii) 24+250 FDR 4300265 (block road with an earth berm)

(3) Coordinate with the approach road owner on typical sections.

f. Turnout Details

(1) Tabulation of Quantities.

(2) Provide details for the turnout/parking area proposed near 15+000, and 20+560**.**

g. Earthwork Details

(1) Tabulation of Quantities.

(2) Subexcavation. (Not required with Intermediate submittal)

(3) Waste Disposal. Show disposal sites in 49 Degree Parking areas.

(4) Road Obliteration and Restoration Details

(a) Implement onsite wetland mitigation shown in COE permit application. Work includes embankment removal and planting.

(b) Develop habitat mitigation sites at 15+700 and 17+400.

(c) Obliterate roadway not on existing alignment that is too far from centerline to be shown on the Plan and Profile Sheets. Work includes removal of the timber bridge over Ten Mile Creek.

(d) Provide riparian planting in disturbed areas as required by WDFW.

(5) Riprap. (Not required with Intermediate submittal)

(6) Special Rock embankments. (Not required with Intermediate submittal)

(7) MSE walls. (Typical sections, locations, wall profiles, and quantities). Provide elevation view of all proposed wall locations at a scale of 1:200. Show subgrade shoulder and intersection of existing ground and wall face. Geotech will use these drawings to layout the walls. The Government will provide wall footing elevation, basket size, and tie back requirements. RPA will finalize drawings and provide quantity estimates.

h. Drainage Details.

(1) Tabulation of Drainage Quantities.

(2) Fish passage structures.

i. Miscellaneous Details

(1) Tabulation of Quantities.

(2) Guardrail. (Terminal sections not required with Intermediate submittal)

(3) Fence. Fence between 24+280 and 24+822. (Not required with Intermediate submittal)

(4) Cattle Guard. (Station 24+280 and 24+822)

(5) Right-of-Way centerline monuments. (Not required with Intermediate submittal)

(6) Utility relocation. Relocate water line between 49 Degree North Ski area and housing area where impacted by this project. (Not required with Intermediate submittal)

j. Pavement Marking and Signing.

(1) Permanent Traffic Control. (Not required with Intermediate submittal)

(2) Temporary Traffic Control. (Provide specifications only with Intermediate submittal)

k. General Requirement Details

(1) Tabulation of Quantities.

(2) Material Source. Provide Material Source Development and Reclamation plan sheets for Gletty Pit.

(3) Erosion Control. (Not required with Intermediate submittal)

(4) Temporary Diversion Channels and reclamation. Show diversion plan and site restoration details.

3. Storm water Pollution Prevention Plan. (Not required with Intermediate submittal)

4. Permit Drawings. Provide permit drawings meeting WDFW requirements showing fish passage crossings and mitigation work. Provide permit drawings meeting COE requirements for on-site wetland mitigation.

5. Plan Preparation.

a. Comply with the adopted actions contained in the WFLHD Uniform Plan Implementation Report.

b. Utilize WFLHD CADD Standards. These standards specify text size and element color, weight, level and line code. Adjust plotting software and pen tables to make plan sheets look like WFLHD example plans.

6. Specifications.

a. Scope. Provide special contract requirements (SCR's) which describe in detail the project work required when read in conjunction with Standard Specifications For Construction of Roads and Bridges on Federal Highway Projects, FP-96. Provide special contract provisions, hard copy and disk. FHWA will prepare the complete contract specification document.

b. Format. Provide SCR's in Corel WordPerfect for Windows. Use active voice when writing all SCR's. Supplement and edit WFLHD's standard Library of Specifications (LOS) to develop the contract special provisions or develop the special provisions needed. Follow the LOS's format and method of adding, deleting, and supplementing the FP-96. Use the Corel WordPerfect redline feature to show deleted text and the red line feature to show inserted text.

7. Estimate.

a. Quantities. Provide documentation for all plan quantities**.** Provide sketches and dimensions to illustrate quantity calculations. Provide printout of GEOPAK generated quantities. Develop the bid quantities from the plan quantities in conformance with the FLH-PDDM. Show calculations adjusting from plan quantity to bid quantity.

b. Unit Prices. Document basis for unit prices. Utilize either bid-based or cost-based estimating. FHWA will enter this estimate into FHWA's Engineer's Estimate program. Utilize WFLHD's Unit Bid Price Analysis form.

c. Unit Price Analysis. Attend price review meeting (held concurrently with the Internal Final Design Review) to review the construction estimate. Follow procedure delineated in FHWA design manual. Be prepared to support unit prices as outlined in the FLH-PDDM.

d. Contract Time. Utilize Microsoft Project software to prepare a Critical Path Method (CPM) Schedule for construction. Show all limitations of operations, production estimates, and quantities. Calculate critical path of construction activities to determine construction time. Provide critical path printout using Gantt chart type graphics. Prepare a written narrative that adequately defines the type of work, quantity and location of each activity. Indicate the resources (equipment and manpower) and production rates for all activities. Utilize a mass diagram to break out excavation into separate activities by balance point. Schedule activities so that cross hauling from one balanced section to another is not required. As a minimum show the following as individual activities by earthwork balance point: clearing, excavation, drainage with permit restrictions, retaining walls, and aggregate. Also include as a minimum, mobilization, staking, asphalt concrete surfacing, signing/stripping, demobilization on a project basis. In the CPM schedule depict

the order and interdependence of all activities. The CPM will be used to document the contract time to be used in A+B Bidding.

e. **Road User Administrative Cost Estimate.** Estimate the daily cost for use in A+B Bidding. Use WFLHD provided rates and traffic projections.

8. **Right-of-Way.** Ensure all stipulations in the Forest Highway Easement Deed and stipulations of the County's Highway easements through private property are made a requirement of the PS&E package. Verify that all construction activity is within the Highway Easement or within the Construction easements.

a. Conduct a title/owner search for all potentially impacted properties. Investigate any discrepancies in the location of the various private properties. Prepare R/W plans and descriptions in accordance with requirements of chapter 9 of the FLH-PDDM. Submit drawings or graphic files in version MicroStation SE and version GEOPAK Road 97 Format. Follow symbols, line weights, text, and placement standards as supplied by WFLHD. The plans will show dual units when tying to existing monuments and boundaries, when showing offset to center line and when other dimensioning is required. When using dual units, metric will be first and English will be in parenthesis.

b. Provide copies of updated title search documents, recommendations for correcting unresolved discrepancies and R/W plans which reflect property ownership resulting from title/owner search and intermediate design information. Develop centerline offset descriptions for the R/W purchases needed to construct the project. Prior to developing the final R/W plans and descriptions, consult with Garfield County and DNR to verify the information format necessary to meet their requirements.

c. Utilize the land net established by WFLHD based on found and projected corners. Additional ground survey is not anticipated.

F. Submittals

1. Intermediate Design.

a. Internal Review.

(1) Plans and Specifications. Provide 16 copies of the Plans (11 x 17) and Specifications (8 ½ x 11). Provide the 100's Section SCR's.

(2) Estimate. Provide 2 copies of the estimate.

(3) Cross Sections. Provide 10 copies of plotted cross-sections on 11 x 17 paper at 1cm = 2m scale. Show guardrail, and right-of-way limits on cross sections.

(4) Mass Diagram. Provide two copies.

b. External Review.

(1) Plans and Specifications. Provide 25 copies of the Plans (11 x 17) and Specifications (8 ½ x 11). Provide the 100's Section SCR's.

(2) Estimate. Provide 1 copy of the estimate.

(3) Cross Sections. Provide 15 copies of plotted cross-sections on 11 x 17 paper at 1 cm = 2 m scale. Show guardrail, and right-of-way limits on cross sections.

(4) Mass Diagram. Provide two copies.

c. Estimated quantity of plan sheets, (does not include standard drawings or minor modifications to existing drawings)

(1)	General Information	
	(a) Title Sheet	1
	(b) Plan Symbols and Abbreviations	0
(2)	Summary of Quantities	3
(3)	Typical Section	
	(a) Tabulation of Quantities	1
	(b) Typical Sections	1
(4)	Plan-Profile	
	(a) Tabulation of Quantities	1
	(b) Plan-Profile	16
(5)	Approach Road Details	
	(a) Tabulation of Quantities	1
	(b) Typical Sections	1
	(c) Plan-Profile Approach Roads	14
(6)	Turnout Details	
	(a) Tabulation of Quantities	1
	(b) Typical Sections	2
	(c) Plans	2
(7)	Earthwork Details	
	(a) Tabulation of Quantities	1
	(b) Road Obliteration and Restoration Details	10
	(c) MSE Retaining walls (show subgrade shoulder and projected ground line at face of wall)	10
(8)	Drainage Details	
	(a) Tabulation of Quantities	3
	(b) Culvert Details (fish passage)	7
(9)	Miscellaneous Details	0
(10)	Pavement Marking and Signing	
(11)	General	
	(a) Tabulation of Quantities	1
	(b) Material Source	1
	(c) Erosion Control Plans	0
	(d) Temporary Channel Diversion and restoration	2
(12)	Cross Sections	400

(13)	Mass Diagram	16
	TOTAL	495

2. Intermediate Right-of-Way.

a. The Intermediate R/W submittals includes complete R/W Plans drawn to FS standards showing all ties, land owners and property take for the entire project. In addition R/W plans for DNR land to their standards are required.

b. Internal Review. Provide (2) copies of the 8-1/2 x 11 FS formatted R/W Plans and (2) copies of the DNR formatted R/W Plans.

c. External Review. Provide (6) copies of the 8-1/2 x 11 FS formatted R/W Plans and (4) copies of the DNR formatted R/W Plans.

d. Est. Quantity FS R/W Plans submittal sheets

(1)	Title Sheet	1
(2)	Vicinity Map	3
(3)	Standard Symbols and Abbreviations	1
(4)	Plan Sheets	21

e. Est. Quantity DNR R/W Plans submittal sheets

(1)	Plan Sheets	3

3. Final Right-of-Way.

a. The Final R/W submittals address Intermediate R/W review comments.

b. Internal Review. Provide (3) copies of the R/W Plans.

c. External Review. Provide (4) copies of the 8-1/2 x 11 FS formatted R/W Plans and (4) copies of the DNR formatted R/W Plans.

d. Estimated quantity of plan sheets is the same as for the Intermediate R/W Submittal

4. Permit Drawings.

a. Supply 8-1/2 x 11 drawings needed for permit application. Drawing will include Fish passage structures, temporary water diversion and restoration, and riparian planting.

b. Internal Review. Provide (3) copies of the Permit Drawings.

c. External Review. Provide (3) copies of the Permit Drawings.

d. Est. Quantity Permit Drawings submittal sheets

(1)	Title Sheet/misc.	2
(2)	Typical Sections/details	14

5. Plan-in-Hand Design.

a. Internal Review.

(1) Plans and Specifications. Provide 16 copies of the Plans (11 x 17) and Specifications (8 ½ x 11).
(2) Estimate. Provide 2 copies of the estimate.
(3) Cross Sections. Provide 10 copies of plotted cross-sections on 11 x 17 paper at 1cm = 2m scale. Show guardrail, and right-of-way limits on cross sections.
(4) Mass Diagram. Provide two copies.
(5) CPM Schedule. Provide four copies.

b. External Review.

(1) Plans and Specifications. Provide 25 copies of the Plans (11 x 17) and Specifications (8 ½ x 11).
(2) Estimate. Provide 1 copy of the estimate.
(3) Cross Sections. Provide 15 copies of plotted cross-sections on 11 x 17 paper at 1 cm = 2 m scale. Show guardrail, and right-of-way limits on cross sections.
(4) Mass Diagram. Provide two copies.

c. Estimated quantity of plan sheets, (does not include standard drawings).

(1)	General Information	
	(a) Title Sheet	1
	(b) Plan Symbols and Abbreviations	0
(2)	Summary of Quantities	4
(3)	Typical Section	
	(a) Tabulation of Quantities	1
	(b) Typical Sections	1
(4)	Plan-Profile	
	(a) Tabulation of Quantities	2
	(b) Plan-Profile	16
(5)	Approach Road Details	
	(a) Tabulation of Quantities	1
	(b) Typical Sections	2
	(c) Plan-Profile Approach Roads	14
(6)	Turnout Details	
	(a) Tabulation of Quantities	1
	(b) Typical Sections	2

	(c) Plans	2
(7)	Earthwork Details	
	(a) Tabulation of Quantities	1
	(b) Clearing	1
	(c) Subexcavation	3
	(d) Road Obliteration and Restoration Details	10
	(e) Special Rock Embankment	1
	(f) MSE Retaining walls	14
(8)	Drainage Details	
	(a) Tabulation of Quantities	3
	(b) Culvert Details (fish passage)	7
(9)	Miscellaneous Details	
	(a) Tabulation of Quantities	1
	(b) Details	4
(10)	Pavement Marking and Signing	
	(a) Tabulation of Quantities	1
	(b) Permanent Traffic Control	15
	(c) Temporary Traffic Control	3
(11)	General	
	(a) Tabulation of Quantities	1
	(b) Material Source	2
	(c) Erosion Control Plans	15
	(d) Temporary Channel Diversion and restoration	3
(12)	Cross Sections	400
(13)	Mass Diagram	16
	TOTAL	548

6. Final Design.

a. Internal Review.

(1) Plans and Specifications. Provide 16 copies of the Plans (11 x 17) and Specifications (8 ½ x 11).

(2) Estimate. Provide 2 copies of the estimate, including unit price and quantity documentation.

(3) Cross Sections. Provide 10 copies of plotted cross-sections on 11 x 17 paper at 1cm = 2m scale. Show guardrail, and right-of-way limits on cross sections.

(4) Mass Diagram. Provide two copies.

(5) CPM Schedule. Provide four copies.

b. External Review.

(1) Plans and Specifications. Provide 25 copies of the Plans (11 x 17) and Specifications (8 ½ x 11).

(2) Estimate. Provide 1 copy of the estimate.

(3) Cross Sections. Provide 15 copies of plotted cross-sections on 11 x 17 paper at 1 cm = 2 m scale. Show guardrail, and right-of-way limits on cross sections.
(4) Mass Diagram. Provide two copies.

c. Estimated quantity of plan sheets, (does not include standard drawings).

(1)	General Information	
	(a) Title Sheet	1
	(b) Plan Symbols and Abbreviations	0
(2)	Summary of Quantities	4
(3)	Typical Section	
	(a) Tabulation of Quantities	1
	(b) Typical Sections	1
(4)	Plan-Profile	
	(a) Tabulation of Quantities	2
	(b) Plan-Profile	16
(5)	Approach Road Details	
	(a) Tabulation of Quantities	1
	(b) Typical Sections	2
	(c) Plan-Profile Approach Roads	14
(6)	Turnout Details	
	(a) Tabulation of Quantities	1
	(b) Typical Sections	2
	(c) Plans	2
(7)	Earthwork Details	
	(a) Tabulation of Quantities	1
	(b) Clearing	1
	(c) Subexcavation	3
	(d) Road Obliteration and Restoration Details	10
	(e) Special Rock Embankment	1
	(f) MSE Retaining walls	14
(8)	Drainage Details	
	(a) Tabulation of Quantities	3
	(b) Culvert Details (fish passage)	7
(9)	Miscellaneous Details	
	(a) Tabulation of Quantities	1
	(b) Details	4
(10)	Pavement Marking and Signing	
	(a) Tabulation of Quantities	1
	(b) Permanent Traffic Control	15
	(c) Temporary Traffic Control	3
(11)	General	
	(a) Tabulation of Quantities	1
	(b) Material Source	2

(c)	Erosion Control Plans	15
(d)	Temporary Channel Diversion and restoration	3
(12)	Cross Sections	400
(13)	Mass Diagram	16
	TOTAL	548

7. Final PS&E Design.

a. Internal Review.

(1) Plans and Specifications. Provide 16 copies of the Plans (11 x 17) and Specifications (8 ½ x 11).

(2) Estimate. Provide 2 copies of the estimate.

(3) Cross Sections. Provide 10 copies of plotted cross-sections on 11 x 17 paper at 1cm = 2m scale. Show guardrail, and right-of-way limits on cross sections.

b. External Review.

(1) Plans and Specifications. Provide 25 copies of the Plans (11 x 17) and Specifications (8 ½ x 11).

(2) Estimate. Provide 1 copy of the estimate.

(3) Cross Sections. Provide 15 copies of plotted cross-sections on 11 x 17 paper at 1 cm = 2 m scale. Show guardrail, and right-of-way limits on cross sections.

(4) Mass Diagram. Provide two copies.

c. Estimated quantity of plan sheets, (does not include standard drawings or minor modifications to existing drawings)

(1)	General Information	
(a)	Title Sheet	1
(b)	Plan Symbols and Abbreviations	0
(2)	Summary of Quantities	4
(3)	Typical Section	
(a)	Tabulation of Quantities	1
(b)	Typical Sections	1
(4)	Plan-Profile	
(a)	Tabulation of Quantities	2
(b)	Plan-Profile	16
(5)	Approach Road Details	
(a)	Tabulation of Quantities	1
(b)	Typical Sections	2
(c)	Plan-Profile Approach Roads	14
(6)	Turnout Details	
(a)	Tabulation of Quantities	1
(b)	Typical Sections	2

	(c) Plans	2
(7)	Earthwork Details	
	(a) Tabulation of Quantities	1
	(b) Clearing	1
	(c) Subexcavation	3
	(d) Road Obliteration and Restoration Details	10
	(e) Special Rock Embankment	1
	(f) MSE Retaining walls	14
(8)	Drainage Details	
	(a) Tabulation of Quantities	3
	(b) Culvert Details (fish passage)	7
(9)	Miscellaneous Details	
	(a) Tabulation of Quantities	1
	(b) Details	4
(10)	Pavement Marking and Signing	
	(a) Tabulation of Quantities	1
	(b) Permanent Traffic Control	15
	(c) Temporary Traffic Control	3
(11)	General	
	(a) Tabulation of Quantities	1
	(b) Material Source	2
	(c) Erosion Control Plans	15
	(d) Temporary Channel Diversion and restoration	3
(12)	Cross Sections	400
(13)	Mass Diagram	16
	TOTAL	548

8. Design Data.

a. Design Support.

(1) Design Report. Paper copy.
(2) Quantity Support calculations. Paper and electronic copy.
(3) Geopak Earthwork Report. Paper and electronic copy.
(4) Geopak Seeding Report. Paper and electronic copy.
(5) Geopak Design Report. Paper and electronic copy.
(6) RT 40 files. Existing and design topography. Electronic copy.
(7) All Trip Reports. Paper copy.
(8) Geopak Staking Detail Report.

b. Specifications.

(1) Complete Special Contract Requirements (redline/strike out removed). Paper and electronic copy.

c. Staking Notes. Furnish one set of notes on write-in-the-rain paper, two copies on regular

paper and an electronic copy. Utilize FHWA report printing program.

(1) Design centerline - stationing, and x, y coordinates. Provide two formats (describe alignment and describe chain).
(2) Profile.
(3) R/W centerline alignment - stationing and x, y coordinates. Provide two formats.
(4) R/W construction easements - stationing, offset and x, y coordinates at each break point.
(5) Slope stake notes - slope stake catch point, and superelevation, excavation and embankment slope ratios.
(6) Clearing notes - station, offset and quantities.
(7) Blue Tops - subgrade, centerline and shoulders, station, offset, elevation, xyz coordinates
(8) Red Tops - top of subbase and base aggregate layers - centerline and shoulders, station, offset, elevation, xyz coordinates.
(9) Seeding notes - station, offset and quantities.
(10) List of horizontal and vertical control points.

d. Plans & Cross Sections

(1) Cross Sections. Two paper copies (1cm = 1m).
(2) Cross Sections. Two paper copies 11" x 17" paper (1cm = 2m).
(3) Profile. Two paper copies 22" paper (1 cm = 1 m vertical, 1 cm = 10 m horizontal)
(4) All plan sheets. Three paper copies. Enlarged to 22" x 34" paper

G. SCHEDULE		**Internal**	**External**
1.	Intermediate Design Submittal	04/15/99	05/15/99
2.	Intermediate Review		06/01/99
3.	Preliminary Right-of-Way Submittal	04/15/99	05/15/99
4.	Final Right-of-Way Submittal	07/01/99	07/30/99
5.	Permit Submittal		07/01/99
6.	Plan-in-Hand submittal	09/01/99	10/01/99
7.	Plan-in-Hand review Meeting		10/15/99
8.	Final Design Review Submittal	01/01/99	02/1/99
9.	Final PS&E Signoff Submittal	03/15/00	

10. Design Data submittal 04/01/00

H. CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE

1. The Contracting Officer's Technical Representative for this task order will be David Hilgendorf, Highway Engineer, (360) 696-7620.